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The Dynamics of the Airplane. (Mathematical Monographs, No. 21). By KENNETH P. WILLIAMS, Associate professor of mathematics, Indiana University. New York, John Wiley & Sons, 1921. 8vo. 8 + 138 pp. Price $2.50.

Preface: "It was the good fortune of the author to attend the University of Paris during the spring semester of 1919. One of the special courses which the French authorities, with their characteristic hospitality, arranged for the large number of students from the American army, was a course in aërodynamics, given by Professor Marchis. The comprehensive knowledge that Professor Marchis possessed of all branches of the new science of aëronautics, the inestimable value of his advice to the French Republic during the war, the interest he took in his rather unusual class, could not fail to be an inspiration.

"This book is an outgrowth of those parts of Professor Marchis' lectures that were of particular interest to the author. It is in no sense a complete treatise on aviation. Questions of design and construction are passed over with bare mention. The book is intended for students of mathematics and physics who are attracted by the dynamical aspect of aviation. The problems presented by the motion of an airplane are novel and fascinating. They vary from the most pleasing simplicity to the most stimulating difficulty. The question of stability, particularly, exhibits at the same time the elegance and the power of analysis, and shows the adaptability of some of the general developments in dynamics. The field is assuredly a fruitful one of study, and increasing demands will be put upon the mathematician as the science of aviation continues its rapid development. The mathematician can well own a sense of pride that he had already at hand, in the developments inaugurated by Euler and Routh, a means of dealing accurately with the question of stability, that plays so fundamental a rôle in the science of flying.

"The treatment in the text is for the most part elementary. The last chapter alone demands of the student familiarity with more advanced dynamical methods. In the treatment of descent a slight digression is made to consider in part the nature of the solution of a system of two differential equations. This was done in order not to completely evade what seems a problem of considerable difficulty. It might seem that a treatment of the propeller should not find a place in a book with the purpose of this one. No student of mathematics, however, could fail to own a curiosity as to a propeller's action, and it is hoped the discussion, while not complete, will at least serve as a sufficient introduction."

Contents—Chapter I: The plane and cambered surface, 1–17; II: Straight horizontal flight, 18–30; III: Descent and ascent, 31–51; IV: Circular flight, 52–68; V: The propeller, 69–85; VI: Performance, 86–93; VII: Stability and controllability, 94–106; VIII: Stability (continued), 107–129; Appendix, 131–136; Index, 137–138.

NOTES.

It is announced that John Wallis's *Arithmetica Infinitorum,* translated and edited by J. M. Child, is soon to be published by The Open Court Company, London—The second edition of Hobson's *The Theory of Functions of a Real Variable* is to be in two large volumes. The first volume appeared early in this year (Cambridge University Press; 16 + 671 pages; price 45 shillings).

At the meeting of the Academy of Sciences of the Institute of France last December, several sums of money from the Loutreuil Foundation were voted to assist scientific publications. Among them was 3000 francs to T. Lemoyne and H. Brocard "for the publication of the second and third volumes of their work *Courbes géométriques remarquables (courbes spéciales) planes et gauches*" (*1920,* 130).

The MONTHLY draws the attention of mathematicians to the excessive charges for publications of the Cambridge University Press made by the present American agent, The Macmillan Company. A single illustration will suffice.